

# Northwest Climate Science Center Annual Report 2014

## Executive Summary

It gives us great pleasure to share with you a summary of accomplishments and products delivered by the Northwest Climate Science Center (NW CSC) in Fiscal Year 2014 (FY14). Our services to the Northwest community continue to grow in several dimensions. We launched twelve new climate science projects (a \$1.2 million investment) and wrapped up many others initiated in years past. Graduate students and young career professionals continue to benefit from our education and training opportunities. The Climate Boot Camp – a signature program sponsored by the NW CSC – is well recognized nationwide and a template for similar programs considered among the CSC network. The NW CSC continues to collect and provide access to project data, maps, and tools that can be used by a diverse range of users. We have expanded our online and social media presence such that we reach a larger segment of our audience and end users. Importantly, FY14 allowed us to cement our partnerships and nurture new ones, primarily with the various agency and tribal partners represented at the NW CSC Executive Stakeholder Advisory Committee. The successes in FY14 are a step in the right direction and an encouraging sign for the road ahead. Our accomplishments provide good evidence that we are making progress towards the goal of maintaining a vanguard position in the delivery of best practice services for the Northwest natural and cultural resources community. We are grateful for the support and contributions that many others have made and continue to make in keeping the NW CSC relevant and vibrant.

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*Members of the NW CSC Leadership Team (from left) Gustavo Bisbal, USGS; Nancy Lee, USGS; Philip Mote, Oregon State University; Steve Daley-Laursen, University of Idaho; Eric Salathé, University of Washington*

## 2014 Highlights

### Science Services

- Twelve new projects were funded for Fiscal Year 2014.
- DEPTH, a NW CSC online database of Northwest climate science, is now helping inform similar efforts across the nation.

### Education & Training Services

- 10 Graduate Fellows supported; two new in 2014
- 24 Graduate Fellows and early-career professionals participated in Climate Boot Camp 2014

### Executive Services

- NW CSC was featured at a DOI Advisory Committee on climate change in Portland, Oregon
- NW CSC performed well in an administrative audit by the Department of the Interior Inspector General.

### Data Services

- NW CSC began two new projects to help establish best practices for data management.
- New Data Management Strategy was approved by the NW CSC Leadership Team.

### Communication Services

- New manager of communications hired.
- New academic website launched at [www.nwclimatescience.org](http://www.nwclimatescience.org)





## Science Services

### Data Entry for Project Tracking and Highlighting (DEPTH) Web Portal

The 2012-2016 Science Agenda of the NW CSC encompasses research goals also addressed by many federal, state and tribal partners in the Northwest Region. To ensure coordination, identify research gaps and avoid duplication, the NW CSC created a database of regional climate research projects funded since FY11, leading to the NW CSC's Regional Climate Science Inventory (see main section to the right). This database currently contains over 300 projects from 14 different agencies and organizations, and is updated and expanded regularly.

Public access to the database is available through the Data Entry for Project Tracking and Highlighting (DEPTH) web portal: <http://on.doi.gov/ZO-ZOrr>, developed and maintained by NW CSC and the National Climate Change and Wildlife Science Center (NCCWSC). DEPTH allows users to create, edit, filter and view climate project records sponsored by all regional DOI Climate Science Centers and their partner agencies and organizations.

In FY14 the NW CSC continued to update and add projects to this database and consulted with the NCCWSC leadership and other CSC staff to guide the development of climate research inventories in other regions.

### Guiding Climate Research in the Northwest

The NW CSC's Science Services include: addressing climate research priorities identified in the NW CSC 2012– 2016 [Science Agenda](#), developing requests for proposals, administering funded research projects; and inventorying climate science efforts by our partners in the Northwest. This last service, referred to as the **NW CSC's Regional Climate Science Inventory**, recognizes that other organizations' climate research programs are helping to fill knowledge gaps identified in the NW CSC Science Agenda. To avoid duplication of efforts, guide future funding decisions, and identify the appropriate experts and stakeholders needed to deliberate on particular Science Agenda themes, these projects are being cataloged and added to a freely accessible online database called DEPTH (see sidebar).

The NW CSC funded 12 new science projects in FY14. Each project addresses critical issues facing natural resource managers and conservation practitioners as they plan and implement adaptation strategies to cope with the Northwest's changing climate. These issues vary from measuring watershed vulnerability to determining how to promote habitat connectivity, to understanding the conditions that help retain unburned island refugia in the midst of wildland fire. The research teams use a range of approaches, from modeling and mapping, to surveys and interviews to field experiments and citizen observations. Each project has carefully planned how to streamline the transfer of information and tools from scientists to practitioners with an eye to providing science that is actionable. A full list of FY14 projects is available on page 3.

Many NW CSC projects came to completion in FY14; four of these are described on pages 3-4 of this report. Ongoing projects are listed on page 5.







*Dr. Meade Krosby received FY14 funding to engage practitioners and scientists in landscape connectivity conservation planning for Washington and British Columbia.*

## Twelve New FY14 Projects Funded by NW CSC

**Eric Lindquist** of Boise State University will assess climate change adaptation in the Great Basin by using interviews, surveys and case studies to identify the problems that decision-makers encounter as they undertake scenario planning.

**Crystal Kolden** of the University of Idaho (U of I) will lead a study to identify trends and resilience in unburned islands left behind by wildfire.

**Jason Kreidler** of USGS will investigate watershed vulnerability for communities across the American West by exploring how wildfire frequency, vegetation change, sedimentation rates and population growth are likely to impact surface drinking water supply and demand.

**Doug Shinneman** of USGS and **Tim Link** of U of I will investigate the biological and physical factors that control aspen survival, and use their results to project climate change effects on distribution and productivity in the central and northern Rockies.

**Andrea Woodward** and **Alicia Torregrosa** of USGS and **Jessi Kershner** of EcoAdapt will adapt results from a U.S. Forest Service region-wide vulnerability assessment for use at the forest-specific planning level by determining where to apply locally-relevant adaptation strategies based on maps of resource distribution and risk severity.

**Meade Krosby** of the University of Washington (UW) will undertake the creation of a practitioner-driven, science-based plan for interboundary connectivity conservation in a changing climate.

**Josh Lawler** of UW will update and improve an interactive, online, map-based tool that allows managers to examine projected climate-induced changes to bird habitats and distributions in Oregon and Washington.

**Jessica Lundquist** of UW will use detailed measurements and citizen science observations to map how forests influence snow retention and to maximize snow retention under climate change.

**Lisa Gaines** of Oregon State University and **Rachel Gregg** of EcoAdapt will undertake the Available Science Assessment Project to synthesize knowledge about climate adaptation actions in a way that is useful for resource managers.

**Rodney Frey** of U of I will examine the relationship between the Schitsu'umsh and their landscape to identify, manage and apply indigenous knowledge to issues associated with climate change.

In a project co-funded by the Great Northern LCC, **Tom Miewald** of the U.S. Fish and Wildlife Service will map priority riparian and riverine landscapes to support decision-making by the Arid Lands Initiative and associated partners in the Columbia Basin Partner Forum.

**Donald Sampson** of the Tribal Leadership Forum will conduct a tribal capacity assessment of 15 Columbia Basin Tribes and three inter-tribal organizations to gauge their funding for climate change preparedness and adaptation.

## Future Uncertainty and Extreme Events in Climate and Hydrologic Projections for the Northwest

Limited understanding of uncertainty in climate projections - in particular for extreme events - is a key scientific and management barrier to adaptation planning and vulnerability assessment. To address this problem, Eric Salathé of the University of Washington and Jeremy Littell of the Alaska Climate Science Center leveraged UW Climate Impacts Group products and partnerships to develop a comprehensive assessment of uncertainty in future climate and hydrologic scenarios.

They also examined the likely impacts of extreme events on vegetation and aquatic habitat in the Northwest region. This NW CSC-funded project helps provide a basis for vulnerability and core/corridor assessments. One product from the project is a comprehensive data archive that accounts for climate model uncertainty in future climate and hydrologic scenarios. This archive is stored at the University of Idaho and will soon be made publicly available. Select datasets are currently available here: <http://bit.ly/1zla7na> More information about the project is available here: <http://bit.ly/1t3w31R>.





## Mapping the Probability of Beetle Outbreaks



With support from the NW CSC, Polly Buotte and Jeffrey Hicke of the University of Idaho have developed statistical models to better understand the relationship between climate and beetle outbreaks in whitebark pine forests. They use the results of these models to assess climate influences on recent beetle outbreaks, and to map the current probability of beetle outbreaks across the range of whitebark pine in the U.S., identifying those areas with weather most suitable for epidemics. They also provide estimates of how beetle outbreak probabilities are expected to change under future climate scenarios developed with the latest downscaled climate models. Polly and Jeffrey work with partners at the U.S. Fish and Wildlife Service, USDA Forest Service, National Park Service, and U.S. Geological Survey to ensure that maps of future beetle outbreak probabilities help guide conservation strategies for whitebark pine, a species of high ecological importance. For more information watch Polly's webinar at <https://nccwsc.usgs.gov/webinar/346>.

## Climate Impacts on Sagebrush

NW CSC-funded work by USGS's Matt Germino on understanding the likely impacts of global warming on sagebrush has yielded some surprises. As Matt puts it "One key and interesting finding from our study is that it's not the total amount of precipitation on a site that affects the abundance of sagebrush, but rather the seasonal pattern of precipitation in relation to soil depth." Field experiments conducted by Germino and his colleagues demonstrated that sagebrush growth is influenced more by winter and spring precipitation than by summer rain, and that the effect of winter rain depends on soil depth. These results will help project future changes to the sage steppe biome using landscape models of sagebrush and climate. Future changes associated with global warming will both benefit and harm sagebrush. Understanding the relative influences of different environmental factors will help managers strategize sagebrush conservation and restoration efforts to maximize their positive impact. For more visit [www.nwclimatescience.org/node/237](http://www.nwclimatescience.org/node/237).



## Climate and Community Health

Coastal indigenous communities are particularly vulnerable to climate change because many of their reserves lie in lowlands that may be threatened by sea level rise. In a recent study led by Jamie Donatuto of the Swinomish Tribe, members of the Swinomish Indian Tribal Community in Washington State, the Tsleil-Waututh First Nation in British Columbia and the USGS applied newly developed Indigenous Community Health Indicators (IHIs) to identify climate adaptation priorities for their coastal communities. IHIs, such as "Natural Resources Security" and "Self Determination," were linked to environmental indicators, such as the health of shellfish beds and archaeological resources. The group published their study, titled "Indigenous community health and climate change: integrating biophysical and social science indicators," in *Coastal Management*. Work was on this project co-funded by the NW CSC and the North Pacific LCC. For more visit <http://bit.ly/1wrBM0f>.



# Science Services

## Ongoing Science Projects

Below is a list of projects funded by the NW CSC, awaiting full completion as of Sep 30, 2014. Data and final reports are not yet available for all projects, although many have produced publications, webinars, workshops and other products. Projects represent work by scientists and partners from across the Northwest and beyond. Some have been undertaken as a collaborative partnership with other federal entities, such as NOAA's Climate Impacts Research Consortium (CIRC). Others were made possible through partnership with the North Pacific Landscape Conservation Cooperative (NPLCC). In FY13, that partnership was broadened to include the Alaska CSC, making possible the implementation of four additional tribal projects (see below). More information about each project is available at <http://bit.ly/1so8U66>.

Funding agency	FY	Project Title	Lead PI	Affiliation
NW CSC	2011	Identification and laboratory validation of temperature tolerance for macroinvertebrates	Black, Robert	USGS
NW CSC	2011	Rangewide climate vulnerability assessment for threatened bull trout	Dunham, Jason	USGS
NW CSC	2011	Disentangling the effects of climate and landscape change on bird population trends in the Western U.S. and Canada	Betts, Matthew	OSU
NW CSC	2012	Climate, land management and future wildlife habitat in the Pacific Northwest	Henderson, Emilie	OSU
NW CSC	2012	Extended monitoring and modeling of climate change effects on Pacific Northwest wetlands	Lawler, Joshua	UW
NW CSC	2012	Climate-change vulnerability in the Pacific Northwest: A comparison of three approaches	Lawler, Joshua	UW
NW CSC CIRC	2012	Integrated scenarios of climate, hydrology, and vegetation for the Northwest	Mote, Phillip	OSU
NW CSC	2012	Predicting climate change impacts on river ecosystems and salmonids across the Pacific Northwest	Muhlfeld, Clint	USGS
NW CSC	2012	Climate change and peak flows: Knowledge-to-action to help managers address impacts on streamflow dynamics and aquatic habitat	Nolin, Anne	OSU
NW CSC	2012	Marshes to mudflats: Climate change effects along a latitudinal gradient in the Pacific Northwest	Takekawa, John	USGS
NW CSC NPLCC	2012	Utilizing Yurok Traditional Ecological Knowledge to Inform Climate Change Priorities	Sloan, Kathleen	Yurok Tribe
NW CSC	2013	Vulnerability of traditional women's foods to climate change on the Olympic Peninsula, WA	Ford, Jesse	OSU
NW CSC	2013	Assessing climate change effects on natural and cultural resources of significance to Northwest Tribes	Mote, Phil	OSU
NW & AK CSC NPLCC	2013	Klamath Basin traditional ecological knowledge and climate change science internship	Mattson, Kim	QVIR
NW & AK CSC NPLCC	2013	A coupled (ocean and freshwater) assessment of climate change impacts on Pacific lamprey and Pacific eulachon	Sharma, Rishi	CRITFC
NW & AK CSC NPLCC	2013	Berry risk mapping and modeling of native and exotic defoliators in Alaska	Lojewski, Nathan	Chugachmiut Tribal Consortium
NW & AK CSC NPLCC	2013	Identifying climate vulnerabilities and prioritizing adaptation strategies for eulachon populations in the Chilkoot and Chilkat Rivers	Ryan, Brad	Chilkoot Indian Association

U.S. Geological Survey (USGS); Oregon State University (OSU); University of Washington (UW); Quartz Valley Indian Reservation (QVIR); Columbia River Inter-Tribal Fish Commission (CRITFC).





## Education and Training Services



*Climate Boot Camp 2014 participants overlook Round Butte Dam on the Warm Springs Reservation in Oregon.*

### Climate Boot Camp 2014

The NW CSC supports broad participation in climate science through its education services. Highlights include the NW CSC Graduate Fellowship Program and the annual week-long professional development retreat known as “Climate Boot Camp.”

On August 11th, 24 graduate students and early-career professionals arrived at Silver Falls State Park in Oregon to participate in the NW CSC’s Climate Boot Camp 2014. The goal of this annual retreat is to prepare participants for successful careers by providing training in science education, communication, knowledge integration, and the science-policy interface. This year’s Climate Boot Camp participants included representatives from universities, tribes, and state and federal agencies in the Northwest, and from each of the other regional Climate Science Centers (except the Southwest). Silver Falls State Park provided a scenic backdrop for classroom activities, group meals and informal networking and discussion. Field trips to the Willamette Valley, Cascade Mountains, Warm Springs Indian Reservation and Pacific Coast provided opportunities for on-the-ground lessons about the cultural impacts of climate and about building resilience in natural systems. Throughout the week participants heard presentations from representatives of Oregon City’s Community Development Department and Historical Society, the Umatilla Tribe, the Confederated Tribes of Warm Springs, the Institute for Applied Ecology, The Siletz Tribe, U.S. Fish and Wildlife Service, the Oregon Environmental Council, the Bureau of Land Management, the Columbia River Inter-Tribal Fish Commission, the Washington State Department of Ecology and the Bureau of Reclamation. They engaged in science communication training exercises which included being interviewed on video about their research. At the end of the week students left with new skills, new knowledge and a newly expanded network of colleagues across the Northwest and beyond.

See a photo album of the week here: <http://on.fb.me/1raylv9>

### NW CSC Graduate Fellows\*

**Kevin Buffington**, *Oregon State University*

Assessing tidal marsh vulnerability to sea-level rise across the Pacific Northwest with site-specific data and process-based models

**Isabel Guerrero Ochoa**, *Oregon State University*

Integrating resilience, threshold management and connectivity in reserve network design

**Sarah Frey**, *Oregon State University*

Spatial and temporal dynamics and bird distributions in a mountainous environment

**Sihan Li**, *Oregon State University*

Climateprediction.net: Using superensembles to model regional climate

**Lindsey Thurman**, *Oregon State University*

Amphibian community dynamics and climate change: where ecological processes meet evolutionary interactions

**Collete Gantenbein**, *University of Idaho*

Examining climate impacts on burn severity and land cover change in the Pacific Northwest

**Brittany Jones**, *University of Washington*

Adaptive capacity of tidal wetlands to future climate change in Puget Sound: Implications for strategic conservation and restoration

**Harry Podschwit**, *University of Washington*

Creating a model of wildfire growth based on weather and climate variables

**Ronda Strauch**, *University of Washington*

Future summer thunderstorms, landslides and infrastructure impacts

**Erika Sutherland**, *University of Washington*

Reproduction, recruitment and management of invasive smallmouth bass in Pacific Northwest streams

\* as of October 2014



## Featured Current and Recent NW CSC Graduate Fellows

The NW CSC fellowship program aims to prepare exceptional graduate students and early-career professionals for successful careers in climate science, climate education, and natural resource and cultural resource management. Each fellow receives, not just support for their research, but also training in communication, policy and diverse community perspectives on climate and resource management through participation in the annual Climate Boot Camp. Below are short profiles of three current and recent NW CSC Graduate Fellows. Profiles of all 10 current fellows can be found at [www.nwclimatescience.org](http://www.nwclimatescience.org).



**Sarah Frey, Oregon State University:** Local habitat features like forest cover can buffer large-scale patterns of climate change. For the last two years Sarah Frey has studied how birds, insects and plants interact, and how these interactions are influenced by climate variables across mountainous terrain. After obtaining temperature data at unprecedented resolution in two watersheds, she found that areas with more warming had fewer birds, and that the diets of those birds reflected less insect diversity. Importantly for managers, Sarah also found that vegetation buffers temperature increases at the local scale, suggesting that restoration projects may promote the persistence of mountain species despite regional warming. Sarah is advised by Matt Betts. She plans to graduate this fall and to continue her post-doctoral research at Oregon State University.

**Ronda Strauch, University of Washington:** Climate change is projected to increase the frequency of heavy precipitation events in the Northwest where local conditions spell high risk of landslides. Working with partner agencies, Ronda Strauch assessed how climate change will likely impact future landslide locations and frequency, producing a report with the North Cascades National Park Complex and U.S. Forest Service on risks to public assets such as roads. Ronda also helped develop a mobile phone application to inventory culverts, which are vulnerable to high streamflows. The app was selected as one of 13 finalists in ESRI's 2014 Disaster Resilience App Challenge. Ronda's interest in the vulnerability of transportation systems stems from her previous 12 years with the King County Department of Transportation. When she finishes school she plans to continue adaptation research within federal, state or local government.



**Jacob Wolf, University of Idaho:** As a 2010-2012 NW CSC Graduate Fellow at the University of Idaho Jacob Wolf developed large datasets of drought indices across Idaho to help project streamflow in unregulated basins. Jacob is now the Air Quality Meteorologist for the Idaho Department of Environmental Quality where he develops products and forecasts that help various state federal and tribal agencies determine limits on burning and other polluting activities. Jacob identifies Climate Boot Camp as one of the most valuable aspects of his fellowship. "It was eye-opening for me to consider the importance of taking scientific results from researchers and effectively relating that to land managers, stakeholders, and non-scientists. To me, it was very useful to work in the Boot Camp environment as it opened many different branches of the information tree that I hadn't previously considered."



## Executive Services



*The Leadership Team and staff of the NW CSC (clockwise from top left): Eric Salathé, Steve Daley-Laursen, Gustavo Bisbal, Greg Gollberg, Philip Mote, Lisa Hayward Watts, Nicole DeCrappeo, Nancy Lee, Josh Foster*

### NW CSC Participates in Audit by the Department of the Interior Inspector General

In FY14, the NW CSC and three other regional CSCs underwent an in-person administrative audit by the DOI Inspector General (IG). They examined operational aspects of the CSCs, including selection and awarding of financial agreements, internal document controls, public notice and transparency, and training of personnel responsible for award management. Staff from both the NW CSC and its host university, Oregon State University, were interviewed during the process. A final report of the audit findings is forthcoming, but initial feedback indicates that the NW CSC performed exceptionally well and there were no major concerns by the IG. In addition, the IG requested information on the NW CSC's Regional Climate Science Inventory (see page 2) to potentially use as a best practice implemented across the CSC network.

### Leadership and Oversight of NW CSC Operations

The Leadership Team (LT) of the NW CSC oversees the Center's operations by building relationships and coordinating science and outreach activities with DOI bureaus and services, other federal agencies, Landscape Conservation Cooperatives (LCCs), tribal nations and inter-tribal councils, state natural resources departments, and university members of our academic consortium. The NW CSC convenes regular meetings of its LT and Executive Stakeholder Advisory Committee (ESAC) to discuss the Center's climate research funding priorities, educational and training opportunities, communications strategies, and finances. NW CSC staff participate in the steering committees and proposal review panels of three LCCs, Great Basin LCC, Great Northern LCC, and North Pacific LCC, and LT members participate in meetings of the national network of eight Climate Science Centers and the National Climate Change and Wildlife Science Center (NCCWSC).

The NW CSC actively engaged with tribal organizations, state natural resource management departments, and the Advisory Committee on Climate Change and Natural Resource Science (ACCCNRS) in FY14. University Director Philip Mote was invited by the Institute for Tribal Environmental Professionals to deliver a presentation on climate science and regional climate research entities including the NW CSC, RISA, and USDA climate hub, at the National Tribal Forum. Federal Director Gustavo Bisbal was an invited speaker at a climate change workshop for tribal council members and tribal staff at the Affiliated Tribes of Northwest Indians (ATNI) Annual Convention and Tradeshow. ATNI represents 57 Northwest tribal governments from Oregon, Idaho, Washington, southeast Alaska, Northern California and Western Montana and provides a forum for sharing information on matters of interest to its member tribes. The NW CSC also initiated conversations with Idaho, Montana, Oregon, and Washington fish and wildlife departments that are responsible for revising their State Wildlife Action Plans to help incorporate climate change information into those plans. Finally, the NW CSC was highlighted at the Advisory Committee on Climate Change and Natural Resource Science (ACCCNRS) meeting, held in Portland, Oregon in September 2014. ACCCNRS advises the Secretary of the Interior on the establishment and operations of NCCWSC and the CSC network.





## Data Services

### Helping Establish Best Practices to Address Common Data Management Problems

The goal of NW CSC's Data Services is to collect and secure climate data and information about the origin and context of the data (metadata) while providing timely access, analytical functions and interpretive services for stakeholders across the Northwest Region. The NW CSC works with partners to organize, store and make accessible the rapidly increasing volumes of data relevant to Northwest climate scientists and natural and cultural resource managers. Data Services for the NW CSC are managed at the University of Idaho by the Northwest Knowledge Network (NKN). The NKN provides a suite of services including data storage and security; database, website, applications and collaborative tools development; website, database and applications hosting; and data and metadata consulting.

With support from the National Climate Change and Wildlife Science Center (NCCWSC) the NW CSC began two innovative projects in FY14 at NKN, both aimed at establishing best practices to address common data management problems. These are titled "Best Practices and Approaches to Managing Social Science Data" and "Schitsu'umsh Relationships with Their Dynamic Landscapes: Identifying, Managing and Applying Indigenous Knowledge and Praxis".

NCCWSC policy states that "all data and information products developed by NCCWSC/ CSC-funded projects will be made publically available". However, sharing social science data is complicated by issues of confidentiality and by a lack of standardized tools for managing metadata that can be critical for proper analysis. The NKN is in the process of inventorying standard practices for curating social science data and surveying needs from user communities to come up with a set of tools, practices and policies that will facilitate data-sharing for NCCWSC and the national network of USGS CSCs.

The NW CSC, NCCWSC, the Coeur d'Alene Tribe and University of Idaho's NKN have also begun work to identify the indigenous knowledge and practices of the Schitsu'umsh people that underlie their interactions with the historically dynamic environment of the Palouse, a major Northwest agricultural area. This pilot project will inventory and organize traditional indigenous knowledge and metadata while developing a set of best practices for tribal/governmental collaborative ethnographic research. Products can eventually be modified and expanded for other tribal and non-tribal communities throughout the United States.

### Additional Highlights from FY14

- Provided technical data management services for the National Climate Change and Wildlife Science Center by specifically supporting NW CSC and SW CSC.
- Drafted a "NW CSC Data and Metadata Management Strategy" approved by the Leadership Team and sent to the Executive Stakeholder Advisory Committee (ESAC) for review. Comments from ESAC are now being incorporated into a final draft.
- Worked with NW CSC communication staff to develop a content management framework for the new academic NW CSC website, which complements the existing NW CSC website managed by the Department of the Interior.
- Designed and developed a mobile-friendly website for the 2014 Pacific Northwest Climate Science Conference which served as the main source of information for participants.
- Updated the online presence for Climate Boot Camp, adding new pages and incorporating content into the new academic NW CSC website.
- Provided data storage, server hosting, and two websites for the Integrated Scenarios Project.



## Communication Services

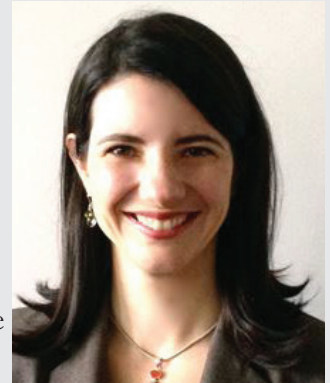
### NW CSC Helps Organize the Pacific Northwest Climate Science Conference

In September, more than 450 scientists, students and practitioners met in Seattle to learn the latest on Pacific Northwest climate science and adaptation, making the fifth annual Pacific Northwest Climate Science Conference the biggest to date. NW CSC helped organize and sponsor the event with NW CSC University of Washington Principal Investigator, Eric Salathé, serving as conference chair. Many NW CSC-funded scientists and graduate fellows presented at the conference on topics that ranged from managing alpine forests to regulate snow-melt and stream flow to increasing tidal marsh resilience to sea level rise.

Special focus was given to NW CSC-funded science during a plenary, titled “Dancing with the Management Stars: Science-Management Partnerships that Provide Actionable Science”, organized by NW CSC Research Coordinator, Nicole DeCrappeo, and NW CSC USGS Director, Gustavo Bisbal. They introduced the session, which featured three talks, each given by a scientist and manager team, who explained the process of finding a common language to produce science to improve adaptation strategies in Northwest forests, mountains, and tidal wetlands. The plenary was well-received, with 74% of those who attended rating it very good or excellent.

### New Manager of Communications

The NW CSC communication program focuses on two goals; developing and distributing climate science to support Northwest resource management, and increasing access to and understanding of NW climate science. These goals target four specific audiences- scientists; resource managers; legislators, policy-makers and administrators; and the general public through a set of seven objectives outlined in the NW CSC Communication Strategy: <http://on.doi.gov/1I7A7L3>. Tribal members are an important component of each audience, warranting special focus as outlined in the NW CSC Tribal Engagement Strategy: <http://on.doi.gov/1sW6ues>.



*Lisa Hayward Watts*

In January of 2014 the NW CSC hired Lisa Hayward Watts as Manager of Communications to help implement the NW CSC Communication Strategy. Lisa comes from USGS where she developed communication products and processes for headquarters, the Northwest Regional Office and Western Fisheries Research Center. More information about her professional background is available here: <http://on.doi.gov/1EvCbn5>. Since January Lisa has developed a new academic website for the NW CSC with Jennifer Hinds of University of Idaho’s Northwest Knowledge Network (see below). Lisa also helped produce briefing documents for Congress, press releases, media advisories, top stories for the USGS home page and highlight reports for DOI. Lisa helped organize the 2014 Pacific Northwest Climate Science Conference, adding a media engagement component for the first time in the conference’s history. She also helped organize and teach a science communication training module for Climate Boot Camp 2014.

### New NW CSC Website Launched

To better support the communication goals of the NW CSC we developed and launched a new website at [www.nwclimatescience.org](http://www.nwclimatescience.org). This University consortium site is designed to complement the existing DOI-hosted site with longer feature stories, an active calendar of events, resource pages, news stories and social media integration (Facebook and Twitter). We will use this site to provide in-depth features about research projects and students funded by the NW CSC and to provide a range of resources specifically targeted to our users, including scientists, managers, students, educators, and climate science communicators.